

REMARKS

Claims 1-11 have been canceled without prejudice or disclaimer, since the invention is adequately covered by the pending claims, which are 12-27. Claims 12 and 13 are independent, and the rest are dependent. Claims 20-27 are product-by-process claims dependent respectively on claims 12-19. The new claims have been drafted in light of the rejections in the outstanding Office action, and reconsideration of the application is respectfully requested.

In the outstanding Office action, claims 1-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over a US patent to Suzuki et al. No. 6,958,127. The same claims are separately rejected on the ground of non-statutory obviousness-type double patenting as being unpatentable over the claims of the Suzuki et al. patent. The Office action recognizes that "the conflicting claims are not identical." But it concludes, "...they are not patentably distinct from each other because it would have been obvious to a person of ordinary skill in the art at the time of the invention to add a compatibilizing agent, i.e., recycle aid, to the recycle mix in order to mold the mix into articles that would be durable and stable."

The rejections are respectfully traversed. The new claims emphasize features of the invention disclosed in the specification as originally filed, including the end of the first full paragraph on page 5 (change in melt fluidity), the bottom of page 8 (proportion of recycled thermoplastic resin), the passage on page 9 under the heading "recycle aid agent" (trunk part and branch part of graft rubber), a passage beginning at the middle of page 14 (gas-assist molding), and the second paragraph before Example 1 on page 15, plus the Examples and Tables.

Independent claim 12 is directed to a method for manufacturing a recycled thermoplastic resin molded article. The method comprises employing gas-assist injection molding or expansion injection molding of a composition for controlling the molding shrinkage rate even in the case where the melt fluidity of said composition is inconstant. The composition is selected to comprise a recycled thermoplastic resin withdrawn from a discarded thermoplastic resin molded article. The molded article is made of styrenic resin,

polyphenylene ether, modified polyphenylene ether or polycarbonate. The method further comprises selecting a recycle aid agent that is a graft rubber. The trunk part of the graft rubber is a diene group rubber and/or an olefin group rubber and/or an acrylic rubber, and the branch part is a graft chain having a compatibility with said styrenic resin, polyphenylene ether, modified polyphenylene ether or polycarbonate.

Independent claim 13 also directed to a method for manufacturing a recycled thermoplastic resin molded article by comprising employing gas-assist injection molding or expansion injection molding of a composition for controlling the molding shrinkage rate even in the case where the melt fluidity of said composition is inconstant. In claim 13, the method comprises selecting the composition to comprise a mixture in which more than 1% by weight of a recycled thermoplastic resin withdrawn from a discarded thermoplastic resin molded article made of styrenic resin, polyphenylene ether, modified polyphenylene ether polycarbonate is compounded in virgin thermoplastic resin. As in claim 12, the method comprises selecting a recycle aid agent that is a graft rubber. Also as in claim 12, the trunk part of the graft rubber is a diene group rubber and/or an olefin group rubber and/or an acrylic rubber and the branch part is a graft chain having a compatibility with said styrenic resin, polyphenylene ether, modified polyphenylene ether or polycarbonate.

Thus, both of the independent claims relate to:

1. Controlling molding shrinkage rate despite inconstant melt fluidity and
2. Selecting a recycle aid agent that is a graft rubber, wherein
3. The trunk part of the graft rubber meets certain specifications; and
4. The branch part also meets certain specifications.

The invention as defined in the independent claims is neither disclosed nor suggested by the US patent to Suzuki et al. At the top of column 52, the patent lists failure phenomena including item 13, volumetric shrinkage of the resin. But those failure phenomena are overcome in accordance with the patent by “improving a mold or changing the profile of a molded article [52:1-3].” There is no teaching of how to overcome them by controlling the shrinkage rate in the first place despite inconstant melt fluidity.

The patent discloses resins having the same skeleton or branch at 7:55, 7:22, 15:5-6, 20:6-7, 186:46-47, 190:44. Nowhere does it mention a graft rubber having trunk and branch parts as in the independent claims of the application, selected and employed in the manner the claims specify.

The claims of the US patent to Suzuki et al. patent are not pertinent to the claims of the application. The independent claims of the patent are 1, 13, 16-19, 37, 45, 51 and 52. We note that a patent claim broad enough to cover a later invention does not by itself make the later invention obvious. The question is not the coverage of the broad claim but whether the application claims recite features that the patent does not disclose.

Dependent claims 4 and 38 of the US patent to Suzuki et al. recite resins having the same skeleton or same branch, but they do not recite a graft rubber having trunk and branch parts as in the independent claims of the application, selected and employed in the manner the application claims specify.

And so neither the specification nor the claims of the US patent to Suzuki et al. support a rejection of the application claims as now pending. They are clearly patentable, and no terminal disclaimer should be required. For the reasons stated, we respectfully request that the outstanding rejections be withdrawn and that a notice of allowance be issued.

Respectfully submitted,
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